

# New Taxa, chiefly of Copepoda described by the late R. B. Seymour Sewell, between 1912 and 1960<sup>1</sup>

By

E. G. SILAS<sup>2</sup>

*Central Marine Fisheries Research Institute*

## INTRODUCTION

IN the course of nearly fifty years of work on the aquatic fauna of India and adjacent countries, and the seas around India, the late Dr. Seymour Sewell<sup>3</sup> described several new taxa of marine, brackishwater and freshwater organisms chiefly belonging to the Class Copepoda. Based on the R.I.M.S. *Investigator* collections, the John Murray Expedition material, and other collections from Indian waters, Sewell described several new genera, subgenera, and about 170 new species, subspecies, varieties and forms of Copepoda. This represents only a small fraction of the species dealt with by him in the course of his extensive faunistic and biogeographic investigations. His published papers also contain descriptions with illustrations of scores of new distributional records of Copepoda to the Indian Seas (species previously known from the Atlantic or Pacific Oceans), redescription, and data on the developmental stages of several species of Copepoda.

Sewell's pioneering work on Copepoda of the Indian Seas has assumed greater importance in recent years in view of the currently concluded intensive faunistic exploration of the Indian Ocean. Since the descriptions of his new taxa are distributed in several publications which may not be readily available for reference, a list of all the new taxa described by him including those belonging to non-Copepoda groups is given here to facilitate easy reference. In order to make the list useful, information as to the correct paginations of the original descriptions, details of illustrations, number of type specimens, sex on which the description is based (especially for Copepoda), and type localities are in-

---

<sup>1</sup>Published with the permission of the Director, Central Marine Fisheries Research Institute, Mandapam Camp.

<sup>2</sup>Present address: C.M.F.R.I., Gopala Prabhu Cross Road, Ernakulam, Cochin-11, Kerala.

<sup>3</sup>Dr. R. B. Seymour Sewell died on February 11, 1964.

cluded. In addition, any subsequent reference made by Sewell to the species, etc., is also given as on many occasions his descriptions of new copepods were based on a single male or female specimen but he had a tendency to add to the descriptions in his later works based on fresh collections. The classification followed here for the general arrangement of the Copepoda is that adopted by him in 1947.

In addition to Copepoda, Sewell's contributions cover various other fields, especially oceanography, parasitology (Helminthology), anthropology, malacology, zoogeography, organic evolution, etc. He pioneered oceanographic investigations in Indian Seas and being of topical interest, a bibliography of his works (excluding Anthropology) is given at the end.

#### NEW TAXA DESCRIBED BY R.B. SEWELL

##### SUCTORIA (Epibionts)

###### Family ACINETIDAE

###### Genus *Acineta* Ehrenberg, emend Collin

*Acineta euchaetae* Sewell, 1951, pp. 278-281, text-figure 7 a-g. [Host and Type locality: From several specimens of *Euchaeta wolfendeni* A. Scott, and *E. marina* (Prestand.) from surface haul at 'John Murray Expedition' station No. 61].

###### Family PODOPHRYIDAE

###### Genus *Paracineta* Collin

*Paracineta goetani* Sewell, 1951, pp. 281-284, text-figures 8 a-e, and 9 a-f. [Host and Type locality: From *Goetanus antarcticus* Wolfenden and *G. curvicornis* Sars from 'John Murray Expedition' station No. 61 in haul from 1500-0 m.].

###### Genus *Hallezia* Sand.

*Hallezia scottocalani* Sewell, 1951, pp. 284-285, text-figure 10 a-f. [Host and Type locality: From *Scottocalanus daughishi* Sewell (both sexes) from 'John Murray Expedition' station No. 145 D, in haul from 500-0 m.].

##### PERIDINIENS (Parasites)

###### Family BLASTODINIIDAE

###### Genus *Blastodinium* Chatton

*Blastodinium apsteini* Sewell, 1951, pp. 330-332, text-figure 31 a-e. [Host and Type locality: *Paracalanus aculeatus* Giesbrecht and *Clausocalanus furcatus* (Brady) from Arabian Sea; also earlier reported from *Clausocalanus arcuicornis* (Dana) from the Mediterranean by Chatton (1920) as *B. contortum hyalinum* (in part)].

*Blastodinium chattoni* Sewell, 1951, pp. 332-337, text-figures 32 a-f, 33 a-c, and 34 a-d. [Host and Type locality: From *Nannocalanus minor* (Claus), *Undinula darwini* (Lubbock), *Paracalanus aculeatus* Giesbrecht, *P. denudatus* Sewell, *P. parvus* (Claus), *Clausocalanus arcuicornis* (Dana), and *C. furcatus* (Brady) from 'John Murray Expedition' from Arabian Sea. Earlier reported by Chatton (1920) from the Mediterranean as *B. contortum hyalinum* (in part)].

## COPEPODA : CYCLOPOIDA

## Section GNATHOSTOMA

## Family CYCLOPINIDAE

## Subfamily Cyclopininae

Genus *Cyclopina* Claus

*Cyclopina intermedia* Sewell, 1924b, pp. 792-793, plate 47, fig. 1. [Several examples of both sexes including ovigerous females from stations B, 133, and 166 in Chilka Lake].

*Cyclopina longifurca* Sewell, 1924b, pp. 794-795, plate 47, fig. 2. [Several ovigerous females (no males) from stations C and 128 in Chilka Lake].

*Cyclopina minuta* Sewell, 1934a, pp. 85-86, text-figure 5 a-f. [Type locality: Hooghly River, from freshwater].

## Family OITHONIDAE

## Subfamily Oithoninae

Genus *Oithona* Baird

*Oithona horai* Sewell, 1934a, pp. 82-84, text-figure 4 a-j. [Type locality: Hooghly River, from freshwater].

## Family ONCAEIDAE

Genus *Oncaea* Philippi

*Oncaea media* Giesbrecht forma *major* Sewell, 1947, p. 261. [Type locality: Several examples of females from 'John Murray Expedition' station No. 61C, from Northern Arabian Sea].

*Oncaea media* Giesbrecht forma *minor* Sewell, 1947, pp. 261-262. [Type locality: Few examples of both sexes from 'John Murray Expedition' station No. 61C from Northern Arabian Sea].

## Family CYCLOPIDAE

Genus *Euryte* Philippi

*Euryte brevicauda* Sewell, 1949, pp. 33-35, fig. 3 a-j. [Type locality: One female in weed-washings from Addu Atoll, Maldive Archipelago].

Genus *Halicyclops* Norman

*Halicyclops tenuispina* Sewell, 1924b, pp. 796-797, plate 47, fig. 3. [Type locality: Two females from Chilka Lake].

Genus *Eurycyclops* Sewell, 1949, pp. 36-39.

[The genus was created to accommodate two new species *E. magna* Sewell (1949), and *E. parva* Sewell (1949). The genotype is not indicated, but the first described species, *E. magna* may be considered so. Sewell also drew attention to the possibility that these two species could represent stages in the life-history of one species (p. 39). On p. 38, line 1, Sewell remarks that '... in one specimen of the smaller form, which I have named *Eurycyclops minor*, there appeared to be indications...' This is apparently an error as there is no subsequent reference to a new species *E. minor*. In all probability Sewell meant *E. parva*, the female of which with a total length of 0.68 mm. is smaller in size than the female of *E. magna* which measures 0.96 mm.,]

*Eurycyclops magna* Sewell, 1949, p. 39, text-figure 5 a-k. [Type locality : Several examples (?); description based on one female taken in weed-washings from Addu Atoll, Maldive Archipelago].

*Eurycyclops parva* Sewell, 1949, pp. 39-41, text-figure 6 a-h. [Type locality : Several examples (?); description based on one female taken in weed-washings from Addu Atoll, Maldive Archipelago].

Genus *Mesocyclops* Sars

Subgenus *Thermocyclops* Kiefer

*Mesocyclops (Thermocyclops) schmeili* Poppe and Mrazek forma *marmagoensis* Sewell, 1957, pp. 89-116, text-figures 1 i-j; 3 a-n; 4 a-e; and 5 a-d. [Type locality : Several adults and copepodid stages from a freshwater pool about a mile off the coast of Marmagoa, Goa].

#### Section SIPHONOSTOMA

Family ASTEROCHERIDAE (=ASCOMYZONTIDAE)

Genus *Asterocheres* Boeck (= *Ascomyzon* Thorell)

*Asterocheres indicus* Sewell, 1949, pp. 53-56, text-figure 10 a-g. [Type locality : One female in weed-washings from Alcyonarians from 'John Murray Expedition' station No. 45].

*Asterocheres orientalis* Sewell, 1949, pp. 51-53, text-figure 9 a-j. [Type locality : Three females in weed-washings from Addu Atoll, Maldive Archipelago].

*Asterocheres ovalis* Sewell, 1949, pp. 56-58, text-figure 11 a-i. [Type locality : One male in washings from Ascidiarians from 'John Murray Expedition' station No. 10].

Family ACONTIOPHORIDAE

Genus *Acontiophorus* Brady

*Acontiophorus maldivensis* Sewell, 1949, pp. 60-62, text-figure 13 a-h. [Type locality : Two females in weed-washings from Addu Atoll, Maldive Archipelago].

Genus *Asteropontius* Thompson & A. Scott

*Asteropontius nicobaricus* Sewell, 1949, pp. 58-60, text-figure 12 a-e. [Type locality : Two females in weed-washings from Nankauri Harbour, Nicobar Islands].

Family DYSPONTIIDAE

Genus *Pteropontius* Giesbrecht

*Pteropontius quartus* Sewell, 1949, pp. 63-65, text-figure 14 a-j. [Type locality : One female from 'John Murray Expedition' station No. 24—in debris from 73-220 m. depth, from Gulf of Aden].

#### Section POECILOSTOMA

Family CLAUSIDIIDAE

Genus *Hemicyclops* Boeck

*Hemicyclops indicus* Sewell, 1949, pp. 69-72, text-figure 16 a-i. [Type locality : Several females and one male in weed-washings from Nankauri Harbour, Nicobar Islands].

Genus *Saphirella* T. Scott

*Saphirella indica* Sewell, 1924b, pp. 800-803, plate 59, fig. 1. [Type locality: A few immature examples from Chilka Lake Stations K, 89 and 148; 1949, p. 66].

*Saphirella nicobarica* Sewell, 1949, p. 66, text-figure 15 a-b. [Type locality: One immature example from Nankauri Harbour, Nicobar Islands].

## Family LICHOMOLGIDAE

Genus *Anthessius* Della Valle (= *Pseudomolgus* Sars)

*Anthessius brevifurca* Sewell, 1949, pp. 76-78, text-figure 17 a-k. [Type locality: One female in weed-washings from Addu Atoll, Maldive Archipelago].

*Anthessius investigatoris* Sewell, 1949, pp. 80-81, text-figure 18 a-e. (on p. 79). [Type locality: One male in weed-washings from R.I.M.S. *Investigator* station No. 664, Henry Lawrence Island, Andaman Islands].

Genus *Preherrmannella* Sewell, 1949, p. 82.

[The genus was created to accommodate eight species of which three were described as new by Sewell. According to Sewell, 'In this genus I include *Preherrmannella prehensilis* (Sars), *robusta* (Thompson and A. Scott), *serendibica* (Thompson and A. Scott) and two new species *nicobarica* sp. nov. and *adduensis* sp. nov., all with a prehensile second antenna, and *finmarchica* (T. Scott), *tenuicaudis* (Sars) and *brevicauda* sp. nov. with a non-prehensile 2nd antenna.' The genotype is not indicated, but the species first described under the new genus is *P. brevicauda* Sewell].

*Preherrmannella adduensis* Sewell, 1949, pp. 85-89, text-figures 20 a-g, and 21 a-i. [Type locality: One female and two males from Addu Atoll, Maldive Archipelago; Also one female from Nankauri Harbour, Nicobar Islands].

*Preherrmannella brevicauda* Sewell, 1949, pp. 82-85, text-figure 19 a-o. [Type locality: One female and one male in weed-washings from Addu Atoll, Maldive Archipelago].

*Preherrmannella nicobarica* Sewell, 1949, pp. 89-91, text-figure 22 a-g. [Type locality: One female in weed-washings from Nankauri Harbour, Nicobar Islands].

Genus *Lichomolgus* Thorell

*Lichomolgus rotundus* Sewell, 1949, pp. 97-99, text-figure 23 a-h. [On pages 19 and 97 the specific name is indicated as *L. rotundus*, but on pages 93, 98, and 167 it is given as *L. rotundatus*. However, the earlier given spelling is followed here. (Type locality: One female in weed-washings from Addu Atoll, Maldive Archipelago)].

Genus *Macrochiron* BradySubgenus *Macrochiron* s.str.

*Macrochiron (Macrochiron) longipes* Sewell, 1949, pp. 104-105, text-figure 26 a-i. [Type locality: One female in weed-washings from Addu Atoll, Maldive Archipelago].

*Macrochiron (Macrochiron) spinipes* Sewell, 1949, pp. 106-108, text-figure 27 a-i. [Type locality: One female in weed-washings from Nankauri Harbour, Nicobar Islands].

Subgenus *Paramacrochiron* Sewell, 1949, p. 108.

[The subgenus was erected to accommodate the species *Pseudanthessius maximus* Thompson and A. Scott, *P. chelififer* Thompson and A. Scott, *P. parvus* A. Scott, *P. fucicolus* T. Scott, and a new species *Macrochiron (Paramacrochiron) malayense* Sewell. No subgenotype is designated, but the first species to be dealt with under the new subgenus is *Macrochiron (Paramacrochiron) maximus* (Thompson and A. Scott)].

**Macrochiron (Paramacrochiron) malayense** Sewell, 1949, pp. 109-111, text-figure 28 a-f. [Type locality: Two females, both taken at surface in tow-net, one from Kurau River, Perak, Federated Malay States, and the second from off Viper Island, Port Blair, Andaman Islands].

Genus *Kelleria* Gurney

**Kelleria andamanensis** Sewell, 1949, pp. 112-114, text-figure 9 a-i. [Type locality: One female from surface tow-net collection, Macpherson Strait, Andaman Islands].

**Kelleria camortensis** Sewell, 1949, pp. 114-117, text-figure 30 a-m. [Type locality: Several females from Nankauri Harbour, Nicobar Islands; and one male and one female in weed-washings from Addu Atoll, Maldive Archipelago].

**Kelleria gurneyi** Sewell, 1949, pp. 117-119, text-figure 31 a-h. [Type locality: Two females in surface tow-net from Kurau River, Perak, Federated Malay States].

Genus *Pseudanthessius* Claus

**Pseudanthessius graciloides** Sewell, 1949, pp. 123-125, text-figure 34 a-f. [Type locality: One female in weed-washings from Addu Atoll, Maldive Archipelago].

Genus *Nasomolgus* Sewell, 1949, pp. 125-126.

[Monotypic for *N. cristatus* Sewell, 1949].

**Nasomolgus cristatus** Sewell, 1949, pp. 126-127, text-figure 35 a-e. [Type locality: One female from 'John Murray Expedition' station No. 45 along South Arabian Coast—from debris from 38 m. depth].

## COPEPODA : MONSTRILLOIDEA

### Section CYCLOIPMORPHA

#### Family THESPESIOPSYLLIDAE

Genus *Orientopsyllus* Sewell, 1949, pp. 128-129.

[Monotypic for *Orientopsyllus investigatoris* Sewell, 1949].

**Orientopsyllus investigatoris** Sewell, 1949, pp. 129-131, text-figure 36 a-h. [Type locality: Two females taken in surface tow-net from Nankauri Harbour, Nicobar Islands].

### Section MONSTRILLOIDA GENUINA

#### Family MONSTRILLIDAE

Genus *Monstrilla* Dana

**Monstrilla investigatoris** Sewell, 1949, pp. 140-141, text-figure 39 c-e. [Type locality: One female in surface tow-net from Nankauri Harbour, Nicobar Islands].

Genus *Cymbasoma* Thompson

*Cymbasoma nicobarica* Sewell, 1949, pp. 142-144, text-figure 40 a-d. [Type locality: One male in surface tow-net from Nankauri Harbour, Nicobar Islands].

## COPEPODA : NOTODELPHYOIDEA

## Family DOROPYGIDAE

Genus *Botryllophilus* Hesse

*Botryllophilus indicus* Sewell, 1949, pp. 146-148, text-figure 41 a-g. [Type locality: One female in weed-washings from Nankauri Harbour, Nicobar Islands].

## COPEPODA : HARPACTICOIDA

## Family LONGIPEDIIDAE

Genus *Canuella* T. Scott and A. ScottSubgenus *Canuella* s.str.

*Canuella (Canuella) scotti* nom. nov., Sewell, 1940c, p. 136, text-figure 2 a-h. [Substitute name for *Canuella curticauda* A. Scott, 1909, p. 197, pl. lxiv, figs. 1-6—nec *Canuella curticauda* (Thompson and A. Scott) (1893). Species known from Malay Archipelago and Nicobar Islands].

Subgenus *Ellucana* Sewell, 1940c, p. 136.

[Subgenotype not indicated. The two species recognised under the subgenus are: *C. (E.) curticauda* Thompson and A. Scott, and *C. (E.) longicauda* Sewell 1904c].

*Canuella (Ellucana) longicauda* Sewell, 1940c, pp. 136-139, text-figure 3 a-j. [Type locality: From weed-washings from Nankauri Harbour, Nicobar Islands. Number of specimens in the type series is not indicated].

## Family PELTIDIIDAE

Genus *Peltidium* Philippi

*Peltidium maldivianum* Sewell, 1940c, pp. 144-146, text-figure 6 a-h. [Type locality: One female in weed-washings from Addu Atoll, Maldive Archipelago].

## Family TEGASTIDAE

Genus *Tegastes* Norman

*Tegastes minutus* Sewell, 1940c, pp. 147-148, text-figure 7 a-g. [Type locality: One female in weed-washings from Addu Atoll, Maldive Archipelago].

Genus *Parategastes* Sars

*Parategastes sphaericus* (Claus) var. *similis* Sewell, 1924b, pp. 815-817, plate 51, fig. 2; plate 52, fig. 2. [Type locality: Several examples of both sexes from Chilka Lake, station Nos. B, E, F, G, 37, and 133].

Genus *Syngastes* Monard

*Syngastes indicus* Sewell, 1940c, pp. 149-150, text-figure 8 a-g. [Type locality: One female in weed-washings from Addu Atoll, Maldive Archipelago].

## Family HARPACTICIDAE

Genus *Harpacticus* M. Edwards

*Harpacticus gracilis* Claus var. *orientalis* Sewell, 1924b, pp. 811-813, plate 50, fig. 2. [Type locality: One male from Chilka Lake; 1940c, p. 153. (Few examples of both sexes from Nankauri Harbour, Nicobar Islands)].

Genus *Harpacticella* Sars

*Harpacticella lacustris* Sewell, 1924b, pp. 813-815, plate 51, fig. 1. [Type locality: Several examples of both sexes from Chilka Lake, stations B, D 101, 133, and 142 and also in weed-washings from Barkuda].

## Family IDYIDAE

Genus *Tisbe* Lilljeborg

*Tisbe ensifera* (Fischer) var. *indica* (Sewell, 1924b). [= *Idyaea ensifera* var. *indica* Sewell, 1924b, pp. 817-819, plate 52, fig. 1. Type locality: Two females from Chilka Lake; 1940c, p. 160 (from Nankauri Harbour, Nicobar Islands, in tow-netting 12 fathoms near bottom. Number of specimens (?)].

Genus *Tisbintra* Sewell, 1940c, p. 161.

[Monotypic. For *Tisbintra nankaurica* Sewell, 1940c].

*Tisbintra nankaurica* Sewell, 1940c, pp. 161-162, text-figure 12 a-k. [Type locality: One female in tow-netting at surface, Nankauri Harbour, Nicobar Islands].

Genus *Paraidya* Sewell, 1940c, pp. 163-164.

[Genotype not indicated. Genus erected to accommodate two new species, namely *Paraidya major* Sewell, 1940c, and *P. minor* Sewell, 1940c].

*Paraidya major* Sewell, 1940c, pp. 164-167, text-figure 13 a-m. [Type locality: Several examples of both sexes in weed-washings from Nankauri Harbour, Nicobar Islands].

*Paraidya minor* Sewell, 1940c, pp. 167-169, text-figure 14 a-l. [Type locality: Several examples of both sexes in weed-washings from Nankauri Harbour, Nicobar Islands].

## Family THALESTRIDAE

Genus *Phyllothalestris* Sars

*Phyllothalestris orientalis* Sewell, 1940c, pp. 177-180, text-figures 19 a-h (female); 20 a-f (juv. female). [Type locality: Two females, one adult and one in copepodid stage-V in weed-washings from Addu Atoll, Maldive Archipelago].

*Phyllothalestris sarsi* Sewell, 1940c, pp. 180-184, text-figures 21 a-e (female); 22 a-f (male); and 23 a-f (Juv. male). [Type locality: Two females and two males (one immature) in weed-washings from Addu Atoll, Maldive Archipelago; and one female from Nankauri Harbour, Nicobar Islands].

Genus *Parastenhelia* Thompson and A. Scott

*Parastenhelia littoralis* (Claus) forma *scotti* nom. nov., Sewell, 1940c, pp. 195-196, text-figure 28 a-e. [For *Thalestris forficula* T. Scott, 1894, p. 100, pl. 12, figs. 33-41. (One female)].

Genus *Xouthous* Thompson (= *Megarthurum* Norman and T. Scott)

*Xouthous maldiviae* Sewell, 1940c, pp. 198-200, text-figure 30 a-e. [Type locality: One female in weed-washings from Addu Atoll, Maldive Archipelago].



Genus *Eudactylopus* A. Scott

*Eudactylopus anomala* Sewell, 1940c, pp. 219-221, text-figure 40 a-j. [Type locality : One male in weed-washings from Addu Atoll, Maldive Archipelago].

*Eudactylopus fasciatus* Sewell, 1940c, pp. 215-219, text-figures 38 b-j. (female); 38a; 39 a-j (male adult and stage-V). [Type locality : Several examples of both sexes and juvenile male in stage-V in weed-washings from Nankauri Harbour, Nicobar Islands; and from colonies of stag's horn coral from Addu Atoll, Maldive Archipelago].

*Eudactylopus opima* (Brian) forma *major* Sewell, 1940c, pp. 207-209, text-figure 34 a-g. [Type locality : Several examples of both sexes in weed-washings from Nankauri Harbour, Nicobar Islands; and Addu Atoll, Maldive Archipelago].

*Eudactylopus opima* (Brian) forma *minor* Sewell, 1940c, p. 209-211, text-figure 35 a-l. [Type locality : Several examples of both sexes from same localities as forma *major*].

*Eudactylopus striatus* Sewell, 1940c, pp. 211-215, text-figures 36 a-j (male); and 37 a-k (female stage-V). [Type locality: Several males and immature females from Nankauri Harbour, Nicobar Islands].

Genus *Dactylopusia* Norman

*Dactylopusia falcifera* Willey forma *violacea* Sewell, 1940c, pp. 223-226, text-figure 41 a-n. [Type locality : Several examples of males and females in weed-washings from Nankauri Harbour, Nicobar Islands].

*Dactylopusia tropica* Sewell, 1940c, pp. 227-229, text-figure 43 a-i. [Type locality : Females (no.?) in weed-washings from Addu Atoll, Maldive Archipelago].

Genus *Jalysus* Brian

*Jalysus investigatoris* Sewell, 1940c, pp. 230-233, text-figures 44 a-k (female) ; and 45 a-h (male). [Type locality : Several examples of males and females in weed-washings from Addu Atoll, Maldive Archipelago].

*Jalysus proximus* Sewell, 1940c, pp. 234-236, text-figure 46 a-g. [Type locality : Males (no. ?) in weed-washings from Addu Atoll, Maldive Archipelago].

## Family DIOSACCIDAE

Genus *Diosaccus* Boeck

*Diosaccus monardi* Sewell, 1940c, pp. 244-246, text-figure 49 a-j. [Type locality : Females (no. ?) in weed-washings from Perseus Reef, Camorta Island, Nicobar Islands].

Genus *Amphiascus* Sars

*Amphiascus calcarifer* Sewell, 1940c, p. 270.

[Two forms of this species given below are described by Sewell, 1940c].

(a) *Amphiascus calcarifer* Sewell forma *major* Sewell, 1940c, pp. 273-274, text-figure 60 f-g. [Type locality : Three females in weed-washings from Addu Atoll, Maldive Archipelago].

(b) *Amphiascus calcarifer* Sewell forma *minor* Sewell, 1940c, pp. 270-273, text-figures 59 a-i ; and 60 a-e. [Type locality : Several examples of males and females in weed-washings from Addu Atoll, Maldive Archipelago].

**Amphiascus coralicola** Sewell, 1940c, pp. 263-265, text-figure 57 a-h. [Type locality : Examples of both sexes in coral washings from Henry Lawrence Island, Andaman Islands; and in weed-washings from Addu Atoll, Maldivé Archipelago].

**Amphiascus inermis** Sewell, 1940c, pp. 277-280, text-figure 62 a-g. [Type locality : One male in tow-netting from 20 fathoms at Nankauri Harbour, Nicobar Islands].

**Amphiascus nicobaricus** Sewell, 1940c, pp. 252-256, text-figures 52 a-h (female); and 53 a-g (male). [Type locality : Several examples of both sexes in weed-washings from Nankauri Harbour, Nicobar Islands, and Addu Atoll, Maldivé Archipelago].

**Amphiascus rebus** Sewell, 1940c, pp. 260-262, text-figure 56 a-h. [Type locality : Several adult females from Addu Atoll, Maldivé Archipelago; and one female in stage-V in weed-washings from Nankauri Harbour, Nicobar Islands].

**Amphiascus scotti** Sewell, 1924b (nom. nov.), pp. 819-823, plate 54, fig. 1. [Substitute name for *Dactylopus propinquus* T. Scott, 1894, p. 99, pl. 10, figs. 44-52; pl. 11, figs. 1-3 (= *Amphiascus propinquus* (T. Scott) name preoccupied. Several examples from Chilka Lake)].

#### Genus *Teissierella* Monard

**Teissierella adduensis** Sewell, 1940c, pp. 291-293, text-figure 65 a-j. [Type locality : Females in weed-washings from Addu Atoll, Maldivé Archipelago].

#### Genus *Stenhelia* Boeck

##### Subgenus *Delavalia* Brady

**Stenhelia (Delavalia) latisetosa** Sewell, 1940c, pp. 297-300, text-figure 68 a-e. [Type locality : One female in weed-washings from Addu Atoll, Maldivé Archipelago].

**Stenhelia (Delavalia) longifurca** Sewell, 1934a, pp. 94-96, text-figure 8 a-j. [Type locality : Examples from pools at Uttarbhag, Chingrighatta, and Piali River, Bengal].

**Stenhelia (Delavalia) truncatipes** Sewell, 1940c, pp. 295-297, text-figure 67 a-e. [Type locality : One female from Addu Atoll, Maldivé Archipelago].

#### Family AMEIRIDAE

##### Genus *Nitocra* Boeck

**Nitocra spinipes** Boeck var. **orientalis** Sewell, 1924b, pp. 827-828, plate 56, fig. 1. [Type locality : Several examples of both sexes from Chilka Lake].

**Nitocra typica** Boeck var. **lacustris** Sewell, 1924b, pp. 828-829, plate 55, fig. 3, plate 56, fig. 2. [Type locality : Two males and one female from Chilka Lake].

#### Family CANTHOCAMPTIDAE

##### Genus *Leptomesochra* Sars

**Leptomesochra nasuta** Sewell, 1940c, pp. 301-304, text-figure 69 a-h. [Type locality : One female in weed-washings from Addu Atoll, Maldivé Archipelago].

## Family LAOPHONTIDAE

Genus *Laophonte* Philippi

*Laophonte adduensis* Sewell, 1940c, pp. 314-317, text-figure 71 a-j. [Type locality: Two females in weed-washings from Addu Atoll, Maldive Archipelago].

*Laophonte bengalensis* Sewell, 1934a, pp. 98-100, text-figure 10 a-k. [Type locality: Several examples from Chingrighatta in Salt Lake Canal; pool at Uttarbhag; and Piali River at Uttarbhag].

*Laophonte macani* Sewell, 1940c, pp. 319-322, text-figure 73 a-f. [Type locality: One female from 'John Murray Expedition' station No. 45 along South Arabian Coast from 40 m. depth].

*Laophonte quinquespinosa* Sewell, 1924b, pp. 832-834, plate 58, fig. 1. [Type locality: Several examples of both sexes from Chilka Lake, Stations C, 128 and 166].

*Laophonte trispinosa* Sewell, 1940c, pp. 326-328, text-figure 76 a-f. [Type locality: One female in weed-washings from Addu Atoll, Maldive Archipelago].

Genus *Cleta* Claus

*Cleta secunda* Sewell, 1924b, p. 835, plate 59, fig. 2. [Type Locality: One female in tow-netting off Satpara in outer channel, Chilka Lake].

## Family CLETODIDAE

Genus *Laophontella* Thompson and A. Scott

*Laophontella armata* (Willey) var. *indica* Sewell, 1940c, pp. 337-341, text-figures 82 a-m (female); and 83 a-g (male). [Type locality: Two females from Addu Atoll, Maldive Archipelago; and one male from Camorta Island, Nicobar Islands—all taken in weed-washings].

Genus *Limnocletodes* Borutzky

*Limnocletodes secundus* Sewell, 1934a, pp. 101-102, text-figure 11 a-h. [Type locality: Examples from road-side shallow pool at 4 miles from Baruipur on way to Uttarbhag, Bengal].

Genus *Enhydrosoma* Boeck

*Enhydrosoma nicobarica* Sewell, 1940c, pp. 344-346, text-figure 85 a-j. [Type locality: One female in weed-washings from Nankauri Harbour, Nicobar Islands].

## Family CEYLONIELLIDAE

Genus *Ceyloniella* Wilson

*Ceyloniella armata* (Claus) forma *major* Sewell, 1940c, pp. 329-331, text-figures 77 a-g (female) and 78 a-f (male). [Type locality: Several examples of both sexes in weed-washings from Nankauri Harbour, Nicobar Islands and Addu Atoll, Maldive Archipelago].

*Ceyloniella armata* (Claus) forma *minor* Sewell, 1940c, pp. 331-332, text-figure 79 a-f. [Type locality: Several examples of both sexes from same localities as forma *major*].

*Ceyloniella nicobarica* Sewell, 1940c, pp. 332-336, text-figure 80 a-j. [Type locality: Several examples of both sexes from R.I.M.S. *Investigator* station No. 630 west of Nankauri Island, Nicobars, in weed-washings].

- (a) *Ceyloniella nicobarica* Sewell var. (?) Sewell, 1940c, p. 336, text-figure 81 a-i. [Variety unnamed. Description based on several females from Nankauri Harbour, Nicobar Islands; and a few females from Addu Atoll, Maldive Archipelago].

## Family METIDAE

Genus *Metis* Philippi

*Metis jusseaumei* (Richard) forma **major** Sewell, 1940c, pp. 349-350, text-figures 87 a-f (female) and 88 a-f (male). [Type locality: Several examples of both sexes from east side of Camorta Island, Nicobar Islands].

*Metis jusseaumei* (Richard) forma **minor** Sewell, 1940c, pp. 346-349, text-figure 86 a-j. [Type locality: Several examples of males and females in weed-washings from Nankauri Harbour, Nicobar Islands and Addu Atoll, Maldive Archipelago].

## COPEPODA: CALANOIDA

## Tribe AMPHASKANDRIA

## Family CALANIDAE

Genus *Canthocalanus* A. Scott

*Canthocalanus pauper* (Giesbrecht) var. **plumulosus** Sewell, 1912d, p. 355. (Examples from: 13°51.5'-13°55.5' N, 97°57.5'-98°2' E; 13°50'-13°45' N, 97°59.5'-97°55'E; 13°44.5'N, 98°0.5'E); 1914a, p. 193. [Sewell, 1914a, p. 193 showed that the variety *plumulosus* based on the dichotomous branching of some or all of the furcal setae is merely an abnormality due most probably to injury and subsequent regeneration of the setae].

Genus *Undinula* A. Scott

*Undinula caroli* (Giesbrecht) var. **plumulosus** Sewell, 1912d, p. 357. [Examples from 13°50'-13°45'N, 97°59.5'-98°00' E].

*Undinula darwini* (Lubbock) var. **intermedia** Sewell, 1929a, pp. 45-46, text-figure 12 a-d. [Examples from *R.I.M.S. Investigator* Collections].

*Undinula darwini* (Lubbock) var. **symmetricus** Sewell, 1929a, p. 45. [Examples from *R.I.M.S. Investigator* Collections].

*Undinula vulgaris* (Dana) var. **giesbrechti** Sewell, 1929a, p. 31. [Type locality: same as var. *typica*].

*Undinula vulgaris* (Dana) var. **plumulosus** Sewell, 1912d, p. 356; 1929a, p. 31.

*Undinula vulgaris* (Dana) var. **typica** Sewell, 1929a, p. 31. Syn. *U.v.* forma **minor**. [Examples from *R.I.M.S. Investigator* stations 540, 541, 542, 552, 555, 556, 558, 577, 582 and 614].

*Undinula vulgaris* (Dana) var. **zeylanica** Sewell, 1929a, p. 32. [Syn. *U.v.* forma **major** ?].

Genus *Neocalanus* Sars

*Neocalanus minor* (Claus) forma **major** Sewell, 1929a, pp. 21-22, text-figure 2 a-d. [Type locality: *R.I.M.S. Investigator* station No. 614—from Nankauri Harbour, Nicobar Islands].

*Neocalanus minor* (Claus) forma **minor** Sewell, 1929a, pp. 22-25, text-figure 3 a-d. [Type locality: Same as forma **major**].

Family MEGACALANIDAE nov. Sewell, 1947, pp. 20-25.

[To include the genera *Megacalanus* Wolfenden, *Bathycalanus* Sars, and *Bradycalanus* A. Scott].

Genus *Megacalanus* Wolfenden

*Megacalanus princeps* Wolfenden var. *inermis* Sewell, 1947, pp. 25-27, text-figure 2 a-g. [Type locality: One female from 'John Murray Expedition' Station No. 98, Central Area, Arabian Sea. The variety is based on a single specimen showing '... an interesting abnormality'].

Genus *Bradycalanus* A. Scott

*Bradycalanus gigas* Sewell, 1947, pp. 28-30, text-figure 3 a-d. [Type locality: One female from 'John Murray Expedition' Station No. 120, Zanzibar Area].

Family EUCALANIDAE

Genus *Eucalanus* Dana

*Eucalanus pseudattenuatus* Sewell, 1947, pp. 40-43, text-figures 7a, and 8 a-f. [Type locality: Several examples of both sexes and a few stage-V males from 'John Murray Expedition' Stations 61A, 61C, 96, 145, and 172].

Genus *Rhincalanus* Dana

*Rhincalanus gigas* Sewell, 1914a, p. 203 (*nec* T. Scott, 1912, p. 530). [By clerical error the name is given as *R. gigas* instead of *R. cornutus* Dana. The correction is made by Sewell, 1929a, p. 58].

Family PARACALANIDAE

Genus *Paracalanus* Boeck

*Paracalanus aculeatus* Giesbrecht forma *major* Sewell, 1912d, pp. 326-327 (male); 1929a, pp. 62-64 (female); text-figure 20 a-f. [Examples from *R.I.M.S. Investigator* Stations 540-545, 547, 552, 555, 556, 558, 561, 562, 574, 578, 581-583, 587, 589, 590, 591, 614, and Expedition Harbour, Central Group of Nicobar Islands].

*Paracalanus aculeatus* Giesbrecht forma *minor* Sewell, 1912d, pp. 326-327; 1929a pp. 64-66, text-figure 21 a-g. [Areas of occurrence same as for forma *major*].

*Paracalanus denudatus* Sewell, 1929a, pp. 66-68, text-figure 23 a-h. [Type locality: Female examples in surface tow-net at *R.I.M.S. Investigator* Station 614 (Nankauri Harbour, and in Macpherson Strait, Andaman Islands); 1947, p. 51].

*Paracalanus dubia* Sewell, 1912d, pp. 330-332, plate 15, figs. 1-5. [Type locality: Examples from Mouth of Rangoon River, Burma; 1929a, p. 76, text-figure 29 a, b].

*Paracalanus nudus* Sewell, 1929a, pp. 76-78, text-figure 30 a-i. [Type locality: not given. Description based on female].

*Paracalanus serratipes* Sewell, 1912d, pp. 332-334, plate 15, figs. 6-10. [Type locality: Chittagong Region and Rangoon River Estuary; 1914a, p. 208; 1929a, p. 66, text-figure 22 a-b].

Genus *Acrocalanus* Giesbrecht

*Acrocalanus inermis* Sewell, 1912d, pp. 334-336, plate 16, figs. 1-9. [Type locality: Rangoon River mouth, Burma; 1914a, pp. 211-213, plate 17, figs. 3-5; 1924b, p. 781; 1929a, pp. 81-82. *Acrocalanus similis* Sewell, 1914a was made a synonym of this species by Sewell, 1929a].

*Acrocalanus similis* Sewell, 1914a, pp. 211-213, plate 17, figs. 3-5. [Type locality : Gulf of Mannar. Synonym of *A. inermis* Sewell, 1912d].

*Acrocalanus longicornis* Giesbrecht, var. *plumulosus* Sewell, 1912d, p. 359. [Type locality : 13°49'5"N 97°58'5"E].

Family PSEUDOCALANIDAE

Genus *Clausocalanus* Giesbrecht

*Clausocalanus arcuicornis* (Dana) var. *plumulosus* Sewell, 1913b, p. 367. [Type locality : *R.I.M.S. Investigator* station 393 (7°21'06"N 85°07'15" E) in surface tow-net. Later considered by Sewell (1929a, p. 91) as an absolute synonym of *Clausocalanus arcuicornis* (Dana)].

*Clausocalanus farrani* Sewell, 1929a, pp. 94-95, text-figure 38 a-g. [Type locality : Several females from *R.I.M.S. Investigator* station 555, taken in tow-net; 1947, p. 55 ('John Murray Expedition' station 61. Several examples)].

Family AETIDEIDAE

Genus *Euchirella* Giesbrecht

*Euchirella orientalis* Sewell, 1929a, pp. 115-119, text-figure 44 a-f. [Type locality : Several examples of both sexes from *R.I.M.S. Investigator* station 393; 1947, pp. 76-80, text-figure 15 b-h (Numerous examples of both sexes from 'John Murray Expedition' stations 61C, 96, 145C, 172, and 186)].

Genus *Chirundina* Giesbrecht

*Chirundina indica* Sewell, 1929a, pp. 119-123, text-figures 45 a-b; and 46 a-j. [Type locality : Several examples of both sexes from *R.I.M.S. Investigator* station 670; 1947, pp. 92-95, text-figure 20 a-e (Numerous examples of both sexes from 'John Murray Expedition' stations 96, 131D, 145C, 145D, 172 and 186)].

Genus *Valdiviella* Steuer

*Valdiviella ignota* Sewell, 1929a, pp. 137-138, text-figure 52 a-b. [Type locality : One male from *R.I.M.S. Investigator* station 393].

Family EUCHAETIDAE

Genus *Euchaeta* Philippi

*Euchaeta murrayi* Sewell, 1947, pp. 117-119, text-figure 26 a-i. [Type locality : Nine females from 'John Murray Expedition' stations 61A (1 female), 61C (7 females), and 76 (1 female) in northern part of Arabian Sea and Gulf of Oman].

Genus *Paraeuchaeta* A. Scott

*Paraeuchaeta investigatoris* Sewell, 1929a, pp. 158-160, text-figure 60 a-d. [Type locality : Three males from *R.I.M.S. Investigator* station 393; 1947, pp. 125-127 (several examples of both sexes from 'John Murray Expedition' station 96, 172 and 186)].

*Paraeuchaeta malayensis* nom. nov., Sewell, 1929a, pp. 160-168, text-figure 62 a-j. [For *Paraeuchaeta barbata* A. Scott, 1909, nec *Euchaeta barbata* Brady, 1883; 1947, pp. 121-123, text-figure 27 a-f].

*Paraeuchaeta withi* Sewell, 1947, pp. 131-132, text-figure 30 a-c. [Type locality : One male from 'John Murray Expedition' station 131D in Central part of Arabian Sea in 1500-0 m. *Euchaeta sarsi* (male) With, 1915, p. 178, pl. 6, fig. 7b from the North Atlantic is considered by Sewell to be identical with his new species. (nec *Euchaeta sarsi* Farran)].

## FAMILY PHAENNIDAE

Genus *Cornucalanus* Wolfenden

*Cornucalanus indicus* Sewell, 1929a, pp. 179-183, text-figure 66 a-g. [Type locality : One female from *R.I.M.S. Investigator* station 393].

## Family SCOLECITHRICIDAE

Genus *Scottocalanus* Sars

*Scottocalanus daughlishi* Sewell, 1929a, pp. 189-193, text-figures 68 a-l, and 69 a-c. [Type locality : A large number of females and one male from *R.I.M.S. Investigator* stations 373 and 670 ; 1947, pp. 142-143 (several examples of both sexes from 'John Murray Expedition' stations 96, 145C, 145D, 172 and 186 from Central part of Arabian Sea, Maldive Area, and Gulf of Aden)].

*Scottocalanus investigatoris* Sewell, 1929a, pp. 187-189, text-figure 67 a-f. [Type locality : One male from *R.I.M.S. Investigator* station 670].

Genus *Lophothrix* Giesbrecht

*Lophothrix frontalis* Giesbrecht, forma **major** Sewell, 1929a, pp. 193-196, text-figures 70 (part), and 71 a-n. [Type locality : Numerous examples of both sexes from *R.I.M.S. Investigator* collections ; 1947, pp. 149-150, text-figures 37 c-d, and 38 a-f (a few examples from the Arabian Sea taken during 'John Murray Expedition')].

*Lophothrix frontalis* Giesbrecht, forma **minor** Sewell, 1929a, pp. 196-200, text-figures 70 (part), 72 a-j, and 73 a-c. [Type locality : Several examples of both sexes from *R.I.M.S. Investigator* collections ; 1947, p. 149, text-figure 37 a-b (Arabian Sea and Gulf of Aden—'John Murray Expedition')].

Genus *Macandrewella* A. Scott

*Macandrewella scotti* Sewell, 1929a, pp. 202-205, text-figure 76 a-j. [Type locality : A number of examples of both sexes including developmental stages collected at *R.I.M.S. Investigator* Station 614].

Genus *Scolecithrix* Brady

*Scolecithrix nicobarica* Sewell, 1929a, pp. 209-211, text-figure 78 a-g. [Type locality : Examples of both sexes from Nankauri Harbour, Nicobar Islands].

Genus *Scolecithricella* Sars

*Scolecithricella pearsoni* Sewell, 1914, p. 217, plates 17, figs. 6-7, and 18, figs. 1-4. [Type locality : Examples taken in surface tow from Pearl Banks of Ceylon, Gulf of Mannar ; 1929a, p. 215].

Genus *Scaphocalanus* Sars

*Scaphocalanus magnus* (T. Scott) forma **major** Sewell, 1947, pp. 144-145, text-figure 35 a-i. [Type locality : Descriptions based on seven females and one juvenile male taken at 'John Murray Expedition' stations 96 and 136. The species has a world wide distribution].

*Scaphocalanus magnus* (T. Scott) forma **minor** Sewell, 1947, pp. 146-147, text-figure 36 a-h. [Type locality : Twelve females from 'John Murray Expedition' stations 76 and 172 in the Gulf of Oman and the Arabian Sea].

Genus *Amalothrix* Sars

*Amalothrix indica* Sewell, 1929a, pp. 219-221, text-figure 81 a-g. [Type locality : Several female examples from *R.I.M.S. Investigator* station 670 in the

Laccadive Sea ; 1947, pp. 161-162 (seven females from 'John Murray Expedition' stations 61C, 96, and 172 in Northern and Central Arabian Sea].

Tribe HETERARTHRODRIA

Family CENTROPAGIDAE

Genus *Centropages* Kroyer

*Centropages alcocki* Sewell, 1912d, pp. 338-339, plate 17, figs. 1-7. [Type locality : Mouth of Rangoon River, Burma ; 1929a, p. 228].

*Centropages trispinosus* Sewell, 1914a, p. 223, plate 18, figs. 5-8. [Type locality : Kilakarai, Ramnad Coast, Gulf of Mannar ; 1932a, p. 232].

Genus *Isias* Boeck

*Isias tropica* Sewell, 1924b, pp. 782-784, plate 44, fig. 1. [Type locality : Examples of both sexes from Chilka Lake stations E, 15, and 48 ; 1932a, p. 233].

Family DIAPTOMIDAE

Genus *Diaptomus* Westwood

*Diaptomus indicus* Sewell, 1934a, pp. 73-75, text-figure 2 b-g. [Type locality : Examples from Hooghly River, Station Naihati, 16 miles above Howrah bridge (freshwater) and Tank in P.W.D. Bungalow compound, Ghorawal, Mirzapore (freshwater)].

Family PSEUDODIAPTOMIDAE

Genus *Pseudodiaptomus* Herrick

[*Schmackeria* Poppe and Richard, 1890, has been relegated as a subgenus of *Pseudodiaptomus* Herrick by Sewell (1956), while earlier (Sewell, 1947, p. 164) he recognised it as a distinct genus of the family Pseudodiaptomidae. Of the species of *Pseudodiaptomus* described as new to science by Sewell (1912d, 1924a, 1932a), the following species—*P. annandalei*, *P. binghami*, *P. daughlishi*, and *P. tollingeri* would belong to the subgenus *Schmackeria*, while *P. hickmani* and possibly *P. burckhardti* and *P. masoni* belong to *Pseudodiaptomus* s. str.].

*Pseudodiaptomus annandalei* Sewell, 1919a, pp. 5-7, plate 10, fig. 9. [Type locality : Examples from Chilka Lake ; 1924a, p. 787, plate 44, fig. 2 ; 1932a, p. 240].

*Pseudodiaptomus binghami* Sewell, 1912d, pp. 337-338, plate 17, figs. 8-11. [Type locality : Rangoon River Estuary, Burma ; 1919a, p. 7 ; 1924a, p. 786, plate 45, fig. 2 ; 1932a, pp. 240-241].

*Pseudodiaptomus burckhardti* Sewell, 1932a, pp. 235-237, text-figure 83 a-e. [Type locality : One female from *R.I.M.S. Investigator* station 614, Nankauri Harbour, Nicobar Islands ; and a few females from Macpherson Strait, Andaman Islands].

*Pseudodiaptomus daughlishi* Sewell, 1932a, pp. 241-244, text-figure 86 a-h. [Type locality : Several examples of both sexes from Kuala Kuran, Perak, Malaya in surface tow-net collections].

*Pseudodiaptomus hickmani* Sewell, 1912d, pp. 364-365, plate 22, figs. 1-7. [Type locality : Hinze Basin, 14°41'05" N and 97°53'E ; 1924a, p. 786 ; 1932a, p. 235].



**Pseudodiaptomus masoni** Sewell, 1932a, pp. 237-240, text-figure 84 a-j. [Type locality : Several females and copepodid stages from Port Blair Harbour and Macpherson Strait, Andaman Islands].

**Pseudodiaptomus tollingeri** Sewell, 1919a, pp. 2-5, plate 10, fig. 8. [Type locality : Chilka Lake and Port Canning in Gangetic Delta ; 1924a, p. 787, plate 45, fig. 3 ; 1932a, p. 241].

#### Family LUCICUTIIDAE

##### Genus *Lucicutia* Giesbrecht

**Lucicutia challengeri** Sewell, 1932a, pp. 290-294, text-figure 95 a-j. [Type locality : Several examples of both sexes from *R.I.M.S. Investigator* stations 393, and 682. Sewell also gives *Leuckartia flavicornis* Brady, 1883, p. 50, plate 15, figs. 1-6, 16 (nec *Lucicutia flavicornis* Claus) as a synonym ; 1947, p. 174].

#### Family AUGAPTILIDAE

##### Genus *Euaugaptilus* Sars

**Euaugaptilus indicus** Sewell, 1932a, pp. 319-321, text-figure 105 a-j. [Type locality : Two females from *R.I.M.S. Investigator* stations 670 and 680 ; 1947, pp. 201-203, text-figure 51 a-c (one juvenile male—stage V—from 'John Murray Expedition' station 172 in Central Arabian Sea)].

#### Family PSEUDOCYCLOPIDAE

##### Genus *Pseudocyclops* Brady

**Pseudocyclops obtusatus** Brady and Robertson, var. **latisetosus** Sewell, 1932a, pp. 330-331, text-figure 108 a-f. [Type locality : Male (no ?) ; locality not given].

**Pseudocyclops simplex** Sewell, 1932a, pp. 332-333, text-figure 109 a-l. [Type locality : Examples of both sexes ; locality not given].

#### Family CANDACIIDAE

##### Genus *Candacia* Dana

**Candacia magna** Sewell, 1932a, pp. 338-340, text-figure 111 a-h. [Type locality : One female and one male from *R.I.M.S. Investigator* stations 393 and 670].

**Candacia norvegica** Boeck var. **tropica** Sewell 1932a, pp. 336-337, text-figure 110 a-d. [Type locality : Two females from *R.I.M.S. Investigator* station 682].

#### Family PONTELLIDAE

##### Genus *Labidocera* Lubbock

**Labidocera euchaeta** Giesbrecht forma **major** Sewell, 1932a, pp. 361-362. [Same as *L. euchaeta* Giesbrecht Stage-I, Sewell, 1912a, p. 339, plate 18, figs. 1-9. (Male ; no. of specimens ?). (See under *Labidocera gangetica* Sewell)].

**Labidocera euchaeta** Giesbrecht forma **minor** Sewell, 1932a, p. 362. [Same as *L. euchaeta* Giesbrecht Stage-II, Sewell, 1912d, p. 341, plate 19, figs. 1-3. (Females)].

**Labidocera gangetica** Sewell, 1934a, pp. 79-80. [For *L. euchaeta* Giesbrecht Stage-I of Sewell, 1912d, and *L. euchaeta* Giesbrecht forma **major** Sewell, 1932a].

**Labidocera kroyeri** (Brady) var. **bidens** Sewell, 1912d, p. 369, plate 24, fig. 8. [Type locality : Mouth of Tavoy River, Burma].

**Labidocera kroyeri** (Brady) var. **burmanica** Sewell, 1912d, p. 369, plate 23, figs. 4-5. [Type locality : Mouth of Tavoy River, Burma ; 1914a, p. 233 ; 1932a, p. 363].

Genus *Pontella* Dana

**Pontella andersoni** Sewell, 1912d, pp. 344-346, plate 20, figs. 1-6. [Type locality : Coast of Burma ; 1932a, p. 375].

**Pontella investigatoris** Sewell, 1912d, pp. 371-372, plate 23, figs. 1-3. [Type locality : Coast of Burma ; 1914a, p. 236 ; 1932a, p. 382].

Genus *Pontellopsis* Brady

**Pontellopsis scotti** Sewell, 1932a, pp. 388-390, text-figure 129 a-f. [Type locality : Several examples of both sexes from several *R.I.M.S. Investigator* stations along the Burma Coast].

Family ACARTIIDAE

Genus *Acartia* Dana

Group-I. *Acartiae arostratae*

Subgenus *Acartiella* Sewell, 1914a

[Sewell (1914a) erected the genus *Acartiella* for *A. kempi* Sewell, but later (Sewell, 1932a) relegated *Acartiella* as a subgenus of genus *Acartia* Dana].

**Acartia (Acartiella) graveleyi** Sewell, 1919a, p. 10, plates 9, fig. 7, and 10, figs. 1-5. [First described as *Acartiella graveleyi* Sewell. Type locality : Examples from Cochin backwaters) ; 1932a, p. 393].

**Acartia (Acartiella) kempi** Sewell, 1914a, p. 246, plate 20, figs. 1-5, and plate 21, fig. 4. [First described as *Acartiella kempi* Sewell (Type locality : Gulf of Mannar) ; 1932a, p. 393].

**Acartia (Acartiella) major** Sewell, 1919a, p. 13, plates 9, fig. 8, and 10, figs. 2-6. [First described as *Acartiella major* Sewell (Type locality : Examples from Chilka Lake) ; 1924a, p. 791, plate 46, fig. 1 ; 1932a, p. 393].

**Acartia (Acartiella) minor** Sewell, 1919a, p. 15, plates 9, fig. 6, 10, fig. 7. [First described as *Acartiella minor* Sewell (Type locality : Examples from Chilka Lake ; 1924a, p. 791, plate 46, fig. 2 ; 1932a, p. 393)].

**Acartia (Acartiella) tortaniformis** Sewell, 1912d, pp. 346-348, plate 21, figs. 1-10. [First described as *Acartia tortaniformis* (Type locality : Examples from the mouth of Rangoon River, Burma) ; 1932a, p. 393].

Group-II. *Acartiae rostrae*

Subgenus *Euacartia* Steuer

**Acartia (Euacartia) southwelli** Sewell, 1914a, p. 244, plate 19, figs. 8-9. [First described as *Acartia southwelli* Sewell. (Type locality : Examples from Ceylon Pearl Banks, Gulf of Mannar) ; 1924a, p. 790, plate 45, fig. 6 ; 1932a, pp. 393-394, text-figure 130].

Subgenus *Acanthacartia* Steuer

**Acartia (Acanthacartia) chilkaensis** Sewell, 1919a, pp. 9-10, plate 9, figs. 1-5. First described as *Acartia chilkaensis* Sewell. [Type locality : Examples from Chilka Lake ; 1924a, p. 790 ; 1932a, p. 395].

## Family TORTANIDAE

Genus *Tortanus* GiesbrechtSubgenus *Atortus* Sewell, 1932a, p. 400.[Monotypic, known only from *Tortanus (Atortus) tropicus* Sewell, 1932a].*Tortanus (Atortus) tropicus* Sewell, 1932a, pp. 400-402, text-figure 131 a-g. [Type locality : Examples of both sexes from *R.I.M.S. Investigator* station 614—taken in surface tow-net].

## CRUSTACEA : DECAPODA

## Family HYPPOLYTIDAE

Genus *Merhippolyte* Bate*Merhippolyte calmani* Kemp and Sewell, 1912e, pp. 20-22, plate 1, figs. 1-4.[Type locality : Obtained during *R.I.M.S. Investigator* Survey Season 1910-11].

## Class PISCES

## Order PERCIFORMES

## Suborder Gobioidei

## Family GOBIIDAE

Genus *Cryptocentrus* (Ehrenberg) Valenciennes, 1837*Cryptocentrus rubropunctatus* Sewell, 1914b, pp. 134-135, plate 8, fig. 3. [Type locality : One example from *R.I.M.S. Investigator* station 414, Tavoy Island, Coast of Burma].

## DETAILS OF STATION POSITIONS MENTIONED AS TYPE LOCALITIES

## I. CHILKA LAKE :

- |             |    |   |
|-------------|----|---|
| Station No. | B. | At Satpara on 16-12-1913.                                       |
| „           | „  | C. Weed-washings from Rambha on 27-12-1913.                     |
| „           | „  | D. Rambha Bay on 22-1-1914.                                     |
| „           | „  | E. South side of Maludaikadu on 12-4-1914.                      |
| „           | „  | F. Off Barkuda Island on 13-4-1914.                             |
| „           | „  | G. Between Cherriakuda and Breakfast Island on 15-4-1914.       |
| „           | „  | K. Off Gantasila, Rambha Bay in April 1914.                     |
| „           | „  | 15. Rambha Bay, off Boat Harbour on 15-2-1914.                  |
| „           | „  | 48. 2.9 miles east of Barkul Bungalow on 3-3-1914.              |
| „           | „  | 89. Between Mahosa and Satpara in main channel on 18-3-1914.    |
| „           | „  | 101. Between Cherria and Mainland on 20-7-1914.                 |
| „           | „  | 128. Off southernmost island of Manikpatna series on 10-3-1914. |
| „           | „  | 133. Off Mahosa, main channel on 12-9-1914.                     |
| „           | „  | 142. Along Barkuda Island on 23-9-1914.                         |
| „           | „  | 148. Chiriya Island to near Barkuda Island on 19-11-1914.       |
| „           | „  | 166. Anchorage at Barkul due east on 29-11-1914.                |

## II. JOHN MURRAY EXPEDITION—1933-1934 :

- |             |     |   |
|-------------|-----|---|
| Station No. | 10. | Red Sea, 55 m.  |
| „           | „   | 24. Gulf of Aden, 73-220 m.                             |
| „           | „   | 45. South Arabian Coast, 38 m.                          |
| „           | „   | 61. Northern part of Arabian Sea, surface.              |
| „           | „   | 61A. Northern area of Arabian Sea, 1500-0 m.            |
| „           | „   | 61C. Northern area of Arabian Sea, 1000-0 m.; 1500-0 m. |
| „           | „   | 76. Gulf of Oman, 600-0 m.; 1500-0 m.                   |

Station No.	96.	Central part of Arabian Sea, 645-400 m.
„ „	98.	Central area of Arabian Sea, 2800-0 m.
„ „	120.	Zanzibar area, 2926-0 m.
„ „	131D.	Southern area of Arabian Sea, 1500-0 m.
„ „	145.	Maldiva area, 300-0 m.; 500-0 m.
„ „	145C.	Maldiva area, 300-0 m.
„ „	145D.	Maldiva area, 500-0 m.
„ „	172.	Central area of Arabian Sea, 400-0 m.; 850-0 m.; 2091-0 m.
„ „	186.	Gulf of Aden, 600-0 m.; 500-700 m.; 250-0 m.

## III. R.I.M.S. 'INVESTIGATOR' STATIONS :

St. No.	Date	Position	Depth (fms.)	Depth of haul (fms.)			
373	19-xii-1906	15° 59' 10"N, 93° 30' 45"E	195	195			
393	21-x-1911	7° 21' 6"N, 85° 7' 15"E	2000	400			
414	27-x-1913	Fisher Bay, Port Owen, Tavoy Island	..	Littoral			
540	11-12-x-1913	12° 55' 15"N, 98° 27' 00"E	12	1			
541	12-13-x-1913 13-14-x-1913 24-25-x-1913	12° 29' 57"N, 98° 34' 38"E	} 8	Surface			
542	14-15-x-1913				12° 45' 15"N, 98° 22' 00"E	12	„
543	15-x-1913				12° 51' 30"N, 98° 30' 45"E	8	„
544	15-16-x-1913	13° 01' 15"N, 98° 29' 30"E	7	„			
545	16-17-x-1913	12° 40' 00"N, 98° 27' 00"E	9	„			
552	22-xi-1913	12° 44' 00"N, 98° 08' 30"E (3 miles NNW of Brown Rock)	25	25			
555	23-24-xi-1913	12° 45' 50"N, 98° 17' 54"E	12	Surface			
556	31-xi-1913	12° 40' 00"N, 98° 26' 30"E	10	„			
558	2-3-xi-1913	Port Maria, Elphinstone Id.	9	„			
561	4-5-xi-1913	12° 00' 10"N, 98° 20' 30"E	7½	„			
562	6-7-xi-1913	11° 53' 45"N, 98° 20' 45"E	5	„			
574	17-18-xii-1913	11° 53' 45"N, 98° 25' 00"E	7	„			
577	27-28-xii-1913	11° 58' 20"N, 98° 18' 15"E	8	„			
578	30-31-xii-1913	11° 48' 52"N, 98° 23' 23"E	5½	„			
581	1914	Mergui Harbour	6	„			
583	2-3-ii-1914	11° 28' 34"N, 98° 34' 27"E	11	„			
587	7-8-ii-1914	11° 35' 00"N, 98° 34' 15"E	11	„			
589	11-12-ii-1914	11° 23' 33"N, 98° 33' 45"E	6	„			
590	12-16-ii-1914	11° 34' 45"N, 98° 34' 30"E	..	„			
591	16-17-ii-1914	11° 16' 15"N, 98° 38' 30"E	8	„			
613	1-2-v-1914	15° 51' 45"N, 73° 31' 40"E	..	„			
614	26-27-x-1914	Octavia Bay, Nankauri Har- bour.	13	Surface and 9½ fathoms. Also weed- washings.			
664	4-ii-1915	Henry Lawrence Island (From sandy beach and coral reef at south end)	..	Weed-washings.			
670	23-iv-1915	5° 56' 00"N, 76° 22' 00"E	..	Approx. 200 fms. to surface, and from sur- face.			
680	10-iv-1915	South of Chinese fishing village, Kachal Island	..	Littoral; Weed- washings.			
682	28-iv-1915	10° 26' 00"N, 74° 32' 30"E	..	700 fms. to sur- face and from surface.			

LIST OF SCIENTIFIC PUBLICATIONS OF THE LATE DR. R. B. S. SEWELL<sup>1</sup>

- 1912a. Notes on the deep-sea fish obtained by *R.I.M.S. Investigator* during the Survey Season 1910-11. *Rec. Indian Mus.* 7(1) : 1-14.  
 [Based on deep-sea trawls made off the south-west coast of India from *Investigator* stations 388 to 391. Includes descriptions and details of 19 species and a detailed illustrated account of the egg capsule and embryo of *Rhinochimaera* sp. (Holocephali)].
- 1912b. Capture of *Limulus* on the surface.  
*Rec. Indian Mus.* 7(1) : 87-88.  
 [On an adult specimen of *Limulus muluccanus* Latreille (= *Tachypleus gigas* (Müller)) measuring 39 cm. captured in surface tow-net by *R.I.M.S. Investigator* at 18·30 hours on 19-12-1911 close to 97° 45½'E, 14° 43½'N in 10 fathoms].
- 1912c. Notes on the development of larva of *Lingula*.  
*Rec. Indian Mus.* 7(1) : 88-90.  
 [Larvae presumably that of *Lingula anatina* from Hinzé Basin, Burma Coast obtained in plankton during months of December and February 1911. Description, body measurements and comparison with earlier descriptions as regards (a) the stage of formation and protrusion of the peduncle; and (b) the stage at which change in shape of shell takes place].
- 1912d. Notes on the surface-living copepoda of the Bay of Bengal I, and II.  
*Rec. Indian Mus.* 7 : 313-382, pls. xiv-xxiv.  
 [I. The Gymnoplea of the Chittagong and Rangoon River Estuaries ; with notes on the application of 'Brook's Law' to the Copepoda and evidence of dimorphism in this group of Crustacea. pp. 313-348. II. The Gymnoplea of the South Burma Coast and Moscos Island. pp. 349-382. The account also contains descriptions of 8 new species, 6 new varieties and two new forms of Copepoda].
- 1912e. Notes on Decapoda in the Indian Museum. III. Species obtained by *R.I.M.S. Investigator* during the Survey Season 1910-11.  
*Rec. Indian Mus.* 7(1) : 15-32, pl. i (With S. Kemp).  
 [Contains descriptions and notes on 31 species and varieties including a new species—*Merhippolyte calmani* (Family Hyppolytidae)].
- 1912f. Indian fish of proved utility as mosquito destroyers.  
 Thacker, Spink & Co., Calcutta, pp. 1-24 (and B. L. Chudhuri).  
 [Has an 'Introductory note' by Dr. N. Annandale. Eleven species are dealt with and Sewell gives 'Additional notes' on these fish in their natural surroundings].
- 1913a. Note on plankton from Chilka Lake.  
*Rec. Indian Mus.* 9 : 338-340.  
 [General notes on plankton with descriptions of three species of Copepoda, namely *Paracalanus crassirostris* Dahl, *Acartia centrura* Giesbrecht, and *Oithona* sp.].

<sup>1</sup> Excluding papers on Anthropology.

- 1913b. Notes on the Biological work of the *R.I.M.S. Investigator* during Survey Seasons 1910-11 and 1911-12.

*Journ. & Proc. Asiatic Soc. Bengal (n.s.)* 9 (8 & 9) : 339-390.

[Brief history of the Marine Survey of India; notes on observations made during two seasons; shore collecting; bottom trawling; midwater trawling; observations on surface plankton; succession of planktonic organisms along the Burma coast—from Hinzé Basin to Tavoy Island—for the months of November to April; a list of 134 species of molluscs collected at various shore collecting stations in Burmese waters; tables giving station data including data on plankton volume, copepod catch per hour, etc.].

- 1913c. Notes on the fish fauna of certain tanks in Bengal.

*Special Bulletin No. 1, Dept. Agric. Bihar and Orissa, Ranchi*, (with T. Southwell).

- 1914a. Notes on surface Copepoda of the Gulf of Mannar.

*Spolia zeylanica* 9(35) : 191-263.

[Includes descriptions of one new genus and five new species].

- 1914b. Notes on Indian fish. I-II.

*Rec. Indian Mus.* 10(2) : 131-135, pl. 1.

[I. On the genus *Malthopsis* Wood-Mason and Alcock, and species; II. Descriptions of a new goby *Cryptocentrus rubropunctatus* from Tavoy Island, Burma].

- 1914c. Some observations on the development of the Copepoda.

*IXth Congrès International de Zoologie Monaco*, p. 492.

- 1919a. A preliminary note on some new species of Copepoda.

*Rec. Indian Mus.* 16 : 1-18, with 2 plates.

[Includes descriptions of six new species collected from Chilka Lake, Port Canning, and Cochin backwaters. A key for the identification of the species of the genus *Acartiella* Sewell is also given].

- 1919b. The possible occurrence of *Schistosoma japonicum* Katsurada in India.

*Rec. Indian Mus.* 16 : 426-429, with 1 plate.

[Description and figures of a true *Schistosoma* (Cercariae Indicae xxx) almost identical to that of *S. japonicum* found for the first time from a tank in Russa Road, South Tollygunge, Calcutta, from the hosts *Planorbis exustus* Desh., or in a form of *Limnaea amygdalum* Troschel].

- 1920a. On *Mesocoelium sociale* (Lühe).

*Rec. Indian Mus.* 19(3) : 81-96.

[Description of the trematode *M. sociale* from the host *Bufo melanostictus* from Calcutta. Notes on the development of the trematode and comments on the systematic position of the species are also dealt with].

- 1920b. Notes on Mr. Charles' specimen (Filaria).

*Indian Medical Gazette* 55 : 378, Calcutta.

- 1920c. 'Progress Report on a Survey of the Freshwater Gastropod Molluscs of the Indian Empire and their Trematode Parasites.'

*Indian J. Med. Res.* 8 : 93-124 (with N. Annandale).

1921. The Banded Pond-snail of India (*Vivipara bengalensis*).  
*Rec. Indian Mus.* **22**(3) : 215-292, with 3 plates (with N. Annandale).  
 [Part I—Anatomical, and Part IV—‘Bionomics’ (pp. 217-242 and 279-292) are dealt with by Sewell, while Part II—‘The edge of the mantle and the external ornamentation of the shell’ (pp. 243-266), and Part III—‘Systematics’ (pp. 267-278) are dealt with by Annandale].
- 1922a. The Fauna of the Chilka Lake. The Hydrography and invertebrate fauna of Rambha Bay in an abnormal year.  
*Mem. Indian Mus.* **5** : 677-710 (with N. Annandale).
- 1922b. A survey season in the Nicobar Islands on the *R.I.M.S. Investigator*, October, 1921, to March, 1922.  
*J. Bombay nat. Hist. Soc.* **28**(4) : 970-989, with 4 plates.  
 [Natural history observations ; also descriptions of fringing reef, with notes on distribution of corals].
- 1922c. Cercariae Indicae.  
*Indian J. Med. Res.* **10** (Supplement) : 1-327, Calcutta.
- 1924a. Observations on growth in certain molluscs and changes correlated with growth in the radula of *Pyrazus palustris*.  
*Rec. Indian Mus.* **26** : 529-548.  
 [In continuation of work on rate of growth and other correlated changes in the structure and life-history of Indian Molluscs, data is given here on I. Fresh-water inhabitants (*Acrostoma variabile* (Benson), *Melanoides lineatus* (Gray), *M. tuberculatus* (Müller), *Limnaea acuminata* (Lamarck) var. *gracilior* (V. Martens), and *Indoplanorbis exusta* (Deshayes) ; and II. Marine and Brackish-water forms *Littorina scabra* (Linn.), *L. obesa* Say, *Pyrazus palustris* (Linn.), and *Mytilus variabilis* Krss.).
- 1924b. The Fauna of Chilka Lake. Crustacea, Copepoda.  
*Mem. Indian Mus.* **5** (12) : 771-852, with 15 plates.  
 [Out of a total number of 57 species, varieties and forms dealt with, 9 species and 5 varieties are described as new, and most of the species given in the account are illustrated].
- 1925a. Geographic and Oceanographic research in Indian waters. Part I. Introduction, and The Geography of the Andaman Sea Basin.  
*Mem. Asiatic Soc. Bengal* **9** : 1-28, with 3 text-figures and 5 plates.
- 1925b. Geographic and Oceanographic research in Indian waters. Part II.  
 A study of the nature of the sea-bed and of the deep-sea deposits of the Andaman Sea and Bay of Bengal.  
*Mem. Asiatic Soc. Bengal* **9** : 29-49, with 1 text-figure, 1 chart and 2 plates.
- 1926a. The Salps of the Indian Seas.  
*Rec. Indian Mus.* **28** : 65-126.  
 [Records 17 species, subspecies and forms ; most of the species are illustrated, with taxonomic notes added ; also given are, month-wise occurrence of species in Indian waters ; salinity in relation to occurrence of *Salpa cylindrica* on the surface along the Burma Coast in 1911 ; same for *Thalia democratica* in Burmese waters in 1914 and for Nankauri Harbour in 1922].

1926b. A study of *Lithotyra nicobarica* Reinhardt.

*Rec. Indian Mus.* 28 : 296-330, with 2 plates.

[On cryptozoic (lodged in shells, corals, coral conglomerate, solid limestone rock, etc.) pedunculate cirripedes of the genus *Lithotyra*, especially the species *L. nicobarica*. Topics dealt with include taxonomic discussions having a bearing on the species problem in this genus; detailed anatomical description of *L. nicobarica* as well as table of measurements of 60 specimens].

1927a. The study of zoology in India in the Future.

*Proc. 14th Indian Sci. Congr., Lahore, 1927*, pp. 177-187.

1927b. Geographic and Oceanographic research in Indian waters. III. Maritime Meteorology in Indian Seas.

*Mem. Asiatic Soc. Bengal* 9 : 53-129.

1928. Geographic and Oceanographic research in Indian waters. IV. The temperature and salinity of the coastal water of the Andaman Sea.

*Mem. Asiatic Soc. Bengal* 9 : 133-205.

1929a. The Copepoda of Indian Seas. Calanoida. Tribe Amphaskandria.

*Mem. Indian Mus.* 10(1) : 1-221, with 81 text-figures.

[Out of 171 species and varieties, 13 species are described as new. In addition, various copepodid stages are described and figured for 14 species].

1929b. Geographic and Oceanographic research in Indian waters. V. The temperature and salinity of the surface-waters of the Bay of Bengal and Andaman Sea, with references to the Laccadive Sea.

*Mem. Asiatic Soc. Bengal* 9 : 207-355.

1929c. The history and progress of the Zoological Survey of India. Introduction.

*J. Bombay nat. Hist. Soc.* 33(4) : 922-926.

1930. The evolution of the Excretory system in certain groups of the Furcocercous Cercariae.

*Rec. Indian Mus.* 32 : 357-383, with 4 plates.

[The systematic grouping of the various species of the furcocercous cercariae based on characters of their excretory system. An attempt is made to trace the evolution of the excretory system in certain groups].

1931a. The Problem of Evolution. I. Experimental modification of bodily structure.

*Presidential Address : 18th Indian Science Congress, Nagpur, January 2, 1931* : 1-19.

1931b. The Problem of Evolution. II. The trend of evolution under natural conditions.

*Annual Presidential Address ; 1930-1931 : Asiatic Soc. Bengal, Calcutta, February 2, 1931* : 1-14.

1931c. The problem of Evolution. Part I.

*J. Bombay nat. Hist. Soc.* 35 (1) : 115-131 (June 1931).

1931d. The problem of Evolution. Part II.

*J. Bombay nat. Hist. Soc.* 35 (2) : 347-358 (October 1931).

1932a. The Copepoda of the Indian Seas. Calanoida. Tribe Heterarthrandria.

*Mem. Indian Mus.* 10(2) : 223-407, with 40 text-figures and 6 plates.

[Out of a total of 206 species, varieties and forms, 8 species are described as new. Various copepoda stages are described for 12 species].



- 1932b. Marine Biological Research in India.  
*Curr. Sci.* **1** : 155-157.
- 1932c. The Zoological Survey of India.  
*Nature, Lond.* **129** : 530-532.
- 1932d. The coral coasts of India.  
*Geographical Journal* **79** : 449-462.  
[Descriptive accounts of the coral reefs in the Nicobar Islands, and reef processes].
- 1932e. Geographic and Oceanographic research in Indian waters. VI. The temperature and salinity of the deeper waters of the Bay of Bengal and Andaman Sea.  
*Mem. Asiatic Soc. Bengal* **9** : 357-423.
1933. Notes on a small collection of Copepoda from the Malay States.  
*Bull. Raffles Mus.* **8** : 25-31.
- 1934a. A study of the fauna of the Salt Lakes, Calcutta.  
*Rec. Indian Mus.* **36**(1) : 45-121.  
[Geography of the area; salinity and other observations on salt-water lakes near Calcutta; an account of the plankton with special reference to Copepoda and a systematic account of the Copepoda including descriptions of 7 new species].
- 1934b. The John Murray Expedition to the Arabian Sea.  
*Nature, Lond.* **133** : 86-89, 669-672; **134** : 685-688.
- 1934c. Studies on the bionomics of fresh-waters in India. II.  
*Internat. Rev. d. ges. Hydrobiol. u Hydrogr.* **31**.
- 1935a. Geographic and Oceanographic research in Indian waters. VII. The topography and bottom deposits of the Laccadive Sea.  
*Mem. Asiatic Soc. Bengal* **9** : 425-460.
- 1935b. Geographic and Oceanographic research in Indian waters. VIII. Studies on coral and coral formation in Indian waters.  
*Mem. Asiatic Soc. Bengal* **9** : 461-539.
- 1935c. Introduction and list of Stations.  
*Scientific Reports : John Murray Expedition 1933-1934*, **1** : 1-41, with 1 map.  
[John Murray Expedition Committee; Scientific staff; ship's staff; a brief narrative of the voyage; ship and scientific equipment; methods of preservation of collections; station list and map showing track of voyage of *H.E.M.S. Mabihiss*].
- 1936a. An account of Addu Atoll.  
*Scientific Reports : John Murray Expedition 1933-1934*, **1** : 63-93, with 1 text-figure and 8 plates.
- 1936b. An account of Horsburgh or Goifurfehendu Atoll.  
*Scientific Reports : John Murray Expedition 1933-1934*, **1** : 109-125, with 1 text-figure and 6 plates.
- 1937a. The Oceans around India. *In* : An Outline of the Field Sciences of India.  
*Indian Sci. Congr. Assoc. Silver Jubilee Session*, pp. 17-41.

- 1937b. The Floor of the Arabian Sea.  
*Geological Magazine* 74 : 219-230 (with J. D. H. Wiseman).
- 1940a. The Indian Ocean.  
*Union G eod esique et G eophysique Internationale, Assoc. d' Oceanographic Physique Publication Scientifique* 8 : 81-86.
- 1940b. The extent to which the distribution of marine organisms can be explained by and is depended on the hydrographic conditions present in the great oceans, with special reference to the plankton.  
*Proc. Linn. Soc. London, Session 152, pt. 3, (1939-40).*
- 1940c. Copepoda, Harpacticoida.  
*Scientific Reports : John Murray Expedition 1933-1934, 7* : 117-382, with 88 text-figures and 1 chart.  
[Out of a total of 116 species, varieties and forms belonging to 42 genera, 2 genera, 1 subgenus, 30 species, 1 variety and 11 forms are described as new. The account is also partly based on *R.I.M.S. Investigator* collections from other areas of the Indian waters].
1942. The Theory of Continental Drift.  
*Proc. Linn. Soc. London, 155* :
1946. Oceanographical problems in the Indian Ocean.  
*British Commonwealth Scientific Official Conference—Committee on Oceanography and Fisheries, London, DS 80442/1, pp. 4-6 (Mimeo.)*.
1947. The Free-swimming planktonic Copepoda. Systematic Account.  
*Scientific Reports : John Murray Expedition 1933-1934, 8* : 1-303, with 71 text-figures.  
[The account is also partly based on *R.I.M.S. Investigator* collections from parts of the Indian Seas. Of the 230 species, varieties, and forms belonging to 73 genera of Calanoida, Cyclopoida, and Harpacticoida, 1 family, 4 species, 1 variety and 4 forms are described as new].
- 1948a. The Free-swimming planktonic Copepoda. Geographical Distribution.  
*Scientific Reports : John Murray Expedition 1933-1934, 8* : 317-592, with 24 text-figures and 2 charts.
- 1948b. Minimum Oxygen layer in the Ocean.  
*Nature, Lond. 162* : 949-951 (and L. Fage).
1949. Littoral and Semi-Parasitic Cyclopoida : Monstrilloida and Notodelphyoida.  
*Scientific Reports : John Murray Expedition 1933-1934, 9* : 17-199, with 41 text-figures and 1 chart.  
[The account consists of 44 species belonging to 22 genera. Of these, 3 genera, 1 subgenus, and 25 species are described as new. The account is also partly based on material collected from *R.I.M.S. Investigator* from Indian waters].
1950. Dr. Thomas Nelson Annandale's work in India.  
*Rec. Indian Mus. 47(2)* : 173-182.

1951. The Epibionts and Parasites of the Planktonic Copepoda of the Arabian Sea.  
*Scientific Reports : John Murray Expedition 1933-1934*, 9 : 255-394, with 61 text-figures.  
 [The account also includes descriptions of three new Suctorina which are epibionts on Copepods (*Acineta euchaetae* sp. nov., *Paracineta gaetani* sp. nov., and *Hallezia scottocalani* sp. nov.), and two new species of *Blastodinium* (*B. apsteini* sp. nov., and *B. chattoni* sp. nov.) which are parasitic on certain copepods].
- 1952a. Deep-Sea Oceanographical Exploration in Indian Waters.  
*J. Bombay nat. Hist. Soc.* 50 (4) : 705-717.
- 1952b. Oceanographic Exploration, 1851-1951. Paper read before the Association of British Zoologists on January 6, 1951, and published in *Science Progress*, 1952, p. 16.
- 1953a. The Pelagic Tunicata.  
*Scientific Reports : John Murray Expedition 1933-1934*, 10(1) : 1-90, with 32 text-figures and 1 plate.  
 [25 species, varieties and forms are dealt with. The species problem, especially in Pyrosomatidae is discussed at length].
- 1953b. A note on the Productivity of the waters of the northern region of the Indian Ocean.  
*Proc. 8th Pacif. Sci. Congr.*, 3 A : 1138-1144.
1955. A study of the sea coast of Southern Arabia.  
*Proc. Linn. Soc. London*, Session 165, 1952-53, pt. 2 (June 1955 Presidential Address) : 188-210.
1956. The Continental Drift Theory and the distribution of Copepoda.  
*Proc. Linn. Soc. London*, Session 166, 1953-54, pts. 1 & 2 (January 1956) : 149-177.
1957. A review of the subgenus *Thermocyclops* Kiefer of the genus *Mesocyclops* Sars, with a description of a new form of *Mesocyclops* (*Thermocyclops*) *schmeili* Poppe and Mrazek forma *marmagoensis* nov. *Rec. Indian Mus.* 55 : 69-119.
1958. Evolution : The Taxonomer's Approach. Parts I & II.  
*J. Bombay nat. Hist. Soc.* 55(1) : 17-36 (Part I) ; *ibid.* 55(2) : 269-286 (Part II).
- UNPUBLISHED AND MISCELLANEOUS WORKS :
- 'Copepoda' in 'The Fauna of India' Series (Under Publication).
- The Invertebrate Gallery in the Indian Museum. pp. 187-194 (Published by the Indian Museum in the late Twenties).
- 'Oceanographic Studies in Indian Waters.' Extracts from four letters of Dr. R. B. S. Sewell included in the Presidential Address : 1950, delivered before the Zoological Society of India at its Annual Meeting held at Poona on January 4, 1950 by Dr. Sunder Lal Hora. *J. Zool. Soc. India* 2(2) : 73-85 (Sewell's letters and one map reprinted on pp. 78-83).